Homework 3: Arithmetic Operators

CS 1323 Fall 2023

Name: Arboy Magomba

Student ID (usually 112-XXX-XXXX or 113-XXX-XXXX): 113-650-204

1. (10 points; 1 point each) Perform each of the calculations below, and put the result in the box to the right. Pay careful attention to the difference between int and double (whether or not there is a decimal point) and String and char (whether there are single or double quotes). If the operation cannot be performed or does not make sense, say so.

One way to check your work is to write a simple program that prints out each expression. Please be sure that you calculate them manually before you do this, since that will be required on the first exam.

a. 4 + 7 — 11

b. 5 – 6.412 — -1.412

c. 5 + 12 / 7 — 6

d. 16 / 3.0 + 4 — 9.333333333333332

e. 11 / 2 + 3.2 — 8.2

f. “3” + “98” — 398

g. (int) 9.942 — 9

h. 3.1 + 15 / 12 * 5 — 8.1

i. 3.1 * 15 / 12 + 5

8.875

j. 62 % 8

6

2. (10 points; 2 points each) Assuming that the declarations below were made before each part, find the value of result for each expression below. If the expression is not legal in Java, say so. Pay attention to the difference between int and double. **Make sure the assignment statement is legal.** Show your work in the box to obtain partial credit. Decimals should be shown to three digits.

```
int dog = 5;
double canine = 21.5;
int cat = 41;
double feline = 2.15;
```

a. double result = dog + cat * canine;

```
double result = 5 + 41 * 21.5;
double result = 5 + 881.5;
result = 886.5
```

b. double result = (int) canine / dog;

```
double result = (int) 21.5 / 5;
double result = (int) 4.3
double result = 4
```

c. double result = cat / canine * feline;

```
double result = 41 / 21.5 * 2.15;
double result = 1.9069767441860466 * 2.15;
result = 4.1
```

d. int result = dog + cat + feline / canine;

The expression is not legal in Java because the values obtained from tha caluclations is a double, which can not be stored in an integer variable.

e. double result = cat * feline / dog * canine;

```
double result = 41 * 2.15 / 5 *21.5;
double result = 88.14999999999999 / 5 * 21.5;
double result = 17.63 * 21.5;
result = 379.04499999999996
```